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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,350	11/29/2001	Thomas W. Lanzatella	1557-005US1	6058

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EXAMINER

THAI, HANH B

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 04/08/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/997,350

Applicant(s)

LANZATELLA ET AL.

Examiner

Hanh B Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) 8-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-7 and 21-28, drawn to stack levels of storage object, classified in class 711, subclass 132.
- II. Claims 8-14, drawn to a mapping of storage hierarchy, classified in class 711, subclass 117.
- III. Claims 15-20, drawn to an application programming interface system, classified in class 709, subclass 217.

Inventions I, II, and III are related as combination and subcombinations. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination (I) as claimed does not require the particulars of the subcombinations (II, or III) as claimed because it is a stack object program not to be connected to a programming interface. The subcombination II has separate utility such as a mapping of storage hierarchy. The subcombination III has separate utility such as a plug-in module operable to interface. Therefore, the inventions are distinct; however, they could be usable together.

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2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for any of Group I-V is not required for any of the other of Groups I-V, restriction for examination purposes as indicated is proper.

Election

3. A telephone call was made to Noel Kivlin on April 2, 2004 2002, registration number 33,929; a provisional election was made without traverse to prosecute the invention of "Group I", claims 1-7 and 21-28. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-20 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sokolov et al. (US 2002/0169556) in view of Harrison et al. (US Patent no. 6,128,717).

Regarding claim 1, Sokolov discloses a method for resolving a storage object's absolute location within a first storage environment to grant access to the storage object, comprising:

- receiving a storage object reference (see abstract and [0014], Sokolov);
 - determining an initial stack level associated with the storage reference (see [0038], Sokolov);
 - iterating through one or more additional stack levels beginning with the initial stack level (see [0038] and Fig. 3, Sokolov); and
 - translating the storage reference through each iteration (see Fig. 7 and corresponding text; and [0048], Sokolov).
- Sokolov, however, does not explicitly disclose the one or more relative extents until one or more absolute extents are obtained, wherein the one or more absolute extents comprise the storage object's absolute location within the first storage environment. Harrison discloses a method for storage application programming interface for storage and retrieval based upon data object type or size including the relative extents in storage (see col. 6, lines 1-8; Fig. 6 and corresponding text, Harrison). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sokolov as taught by Harrison to include the claimed feature. The motivation of doing so would have been to improve the techniques for tracking and identifying references to objects (see [0013], Sokolov).

Regarding claim 2, Sokolov/Harrison combination discloses that the reference is received from a module included in an application programming interface (API) library (see summary of Harrison).

Regarding claim 3, Sokolov/Harrison combination discloses that the reference is obtained from a client module initiating one or more storage-access modules of the API library resulting in the initiation of the module (see [0038], Sokolov).

Regarding claim 4 Sokolov/Harrison combination discloses that the client module resides in a second storage environment (see Fig.2 and corresponding text, Harrison).

Regarding claim 5, Sokolov/Harrison combination discloses that a file system and volume manager associated with the first storage environment is identified (see Fig.1A and corresponding text, Harrison).

Regarding claim 6, Sokolov/Harrison combination discloses the translating the storage reference, the file system and volume manager provide one or more operations to translate the storage reference into one or more of the relative extents and one or more of the absolute extents (see [0048], Sokolov).

Regarding claim 7, Sokolov/Harrison combination discloses one or more modules within an API library (element 50, Fig.6 and corresponding text, Harrison).

Regarding claim 21, Sokolov discloses a storage object access system, comprising:

- a storage management stack having a plurality of stack levels, wherein the stack levels include a lowest level identifying one or more storage devices of a first storage environment (see abstract; [0014] and [0038], Sokolov);;
- the stack levels to resolve a reference to a storage object and to pass the resolved reference to a next stack level, unless the resolved reference is an absolute reference to the storage object housed on one or more of the storage devices (see [0038] and [0048], Sokolov); and
- Sokolov, however, does not explicitly disclose the module interfaces and controller that selectively calls a number of the plug-in modules until the absolute reference is obtained. Harrison discloses a method for storage application programming interface for storage and retrieval based upon data object type or size including the relative extents in storage (see col. 6, lines 1-8; Fig. 6 and corresponding text, Harrison) and the controller that selectively calls a number of the plug-in modules (see fig. 1A, Harrison). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sokolov as taught by Harrison to include the claimed feature. The motivation of doing so would have been to improve the techniques for tracking and identifying references to objects (see [0013], Sokolov).

Regarding claim 22, Sokolov/Harrison combination discloses one or more replica references are obtained by the controller with the obtained absolute reference, the replica references identifying replicas for the storage object within the first storage environment (see fig.1A; Fig.10-11 and corresponding text, Harrison).

Regarding claim 23, Sokolov/Harrison combination discloses that the controller is an application programming interface (API) library (see summary of Harrison).

Regarding claim 24, Sokolov/Harrison combination discloses the controller executes in both the first storage environment and a second storage environment (see fig.1A; Fig.10-11 and corresponding text, Harrison). Please note that “the file system” and “volume manager” corresponds to the first and second storage environment respectively.

Regarding claim 25, Sokolov/Harrison combination discloses that the controller is used by a client module in a second storage environment (see col.7, lines 3-11, Harrison).

Regarding claim 26, Sokolov/Harrison combination discloses the storage management stack is a storage hierarchy representing a storage configuration for the storage object within the first storage environment (see Fig.1-2 and corresponding text, Sokolov).

Regarding claims 27-28, Sokolov/Harrison combination discloses an application level, a file system level, a volume manager level, and a device level. Fig. 1A of Harrison showing

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application level, a file system level, a volume manager level, and a device level. And the application level, a file system level, a volume manager level, and a device level corresponding to the first level, second level, third level, and the lowest level respectively.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh B Thai whose telephone number is 703-305-4883. The examiner can normally be reached on 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Hanh Thai 
Art Unit 2171
April 2, 2004


SAFET METJAHIC
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100